

Control of Asthma in a Community Health Care Setting

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Asthma Epidemiology

Adult Prevalence 2002

- U.S. lifetime 11.8%, current 7.5%
- AZ lifetime 13.9%, current 9.0%

Asthma Epidemiology

Disease Burden Adults

- Emergency Department 18% (12mo.)
- Urgent Visit 28% (12mo.)
- Asthma Symptoms 75% (30 days)
- Asthma Attack 52% (12 mo.)
- Sleep Difficulty 51% (30 days)
- Activity Limited 28% (12 mo.)

Asthma Epidemiology

Children 5-14 Prevalence

- 4.5% in 1980 (1.5 million)
- 6.3% in 1990 (2.2 million)
- 6.9% in 1996 (2.7 million)
- (Asthma in past 12 months).

Asthma Epidemiology

Disease Burden Children

- 5-17 years (1994-96)
- 14 million missed school days per yr.
- 3.7 days per child with asthma per yr.
- 23% with activity limitation due to asthma

Asthma Epidemiology

Mortality

- 2,891 in 1980, (rate 14.4 / 1 million)
- 5,667 in 1996, (rate 21.8 / 1 million)
- 4,657 in 1999, (rate 17.2 / 1 million)

El Rio Health Center Asthma Program History

- Inner City Asthma Intervention Study (University of Arizona)
- Inner City Asthma Intervention Program (Centers for Disease Control and Prevention) 2001
- Environmental Protection Agency 2003
- Private grants

Asthma Program

Patients Served

- Children 3 years to 18 years of age
- Moderate or Severe Persistent Asthma
- Patients registered at El Rio Health Center with established primary care provider

Asthma Program Staff

- Two Asthma Counselors
- Bilingual
- On-site availability

Asthma Program Components

- Asthma teaching
- Allergen skin testing
- Pulmonary function testing
- Home dust sample allergen testing
- Supplies for home

Skin Test Record

Date: _____

Name: _____

MRN: _____

Left Arm

Regular	W	F		W	F
Dust Mite			Dog		
Roach			Alternaria		
Rat			Hormodendrum		
Cat			Aspergillus		

	W	F
Control		
Histamine		

Right Arm

Additional				
Bermuda			Palo Verde	
Brome grass			Mesquite	
Mulberry			Tumble Weed	
Olive			Careless Weed	

COMMENTS:

Asthma Program Teaching Topics

- Disease processes in asthma
- Controller medications
- Rescue medications
- Peak flow meters
- Asthma Action Plan



Student Asthma Action Plan

Academic year: _____

Return to School Nurse: _____

School Nurse Phone: _____ Fax: _____

Name of Student _____ Age _____ Date of Birth _____

Teacher _____ Grade _____ Room Number _____

Asthma Care Physician _____ Phone Number _____

Other Physician _____ Phone Number _____

When my child is nearing an asthma episode, I notice the following signs (please circle all that apply):

Runny/Stuffy Nose	Funny Feeling in Chest	Itchy Throat	Itchy Chest	Tummy Ache
Feeling Weak	Headache	Dry Mouth	Getting Upset	Nervous
Sad	Sneezing	Coughing	Watery Eyes	Circles Under Eyes

Other (please list): _____

My child's asthma triggers (things that start an asthma attack) are (please circle all that apply):

Animals With Fur	Dust	Cigarette Smoke	Strong Smells
Cold air	Humid air	Colds	Sinus Infections
Exercise (Running, Sports)	Aerosols (Hair Spray, Perfume)	Emotions (Sad, Happy)	

Cockroaches Mold

Food (please list): _____

Other (please list): _____

I have reviewed my child's action plan with the school nurse and believe all of the information to be accurate. I agree to notify the school nurse of any changes in my child's condition including emergency room visits and hospitalizations. I give the school nurse and my child's physician permission to contact one another or my insurance/Medicaid carrier for the purpose of obtaining information related to my child's health. A reasonable effort will be made to obtain the information from me prior to any other source.

Parent/Guardian Signature _____ Date _____

PLEASE HAVE YOUR PHYSICIAN COMPLETE THE 2ND SIDE (OVER).

Patient: _____
MRN: _____ Doctor: _____

Dr. Signature: _____ Date: _____

ASTHMA ACTION PLAN

El Rio Health Center

839 W. Congress St. Tucson, AZ 85745

Asthma Severity
(Must check one):

☐ Intermittent
☐ Mild Persistent

☐ Moderate Persistent
☐ Severe Persistent

GREEN ZONE:

This is where you should be everyday.

- ☐ You've no symptoms of asthma.
- ☐ You can do usual activities.
- ☐ You can sleep without symptoms.

Peak Flow: _____ to _____

(usually 80-100% of personal best)

☐ Recommend annual flu shot

Controller Medications:

Medicine	Dose	When to give it
<input type="checkbox"/> Flovent _____ mcg	2 puffs	_____ times per day, regularly (rinse mouth)
<input type="checkbox"/> Singulair _____ mg	1 tablet	1 time per day, regularly
<input type="checkbox"/> Advair Diskus ____/50	1 puff	_____ times per day, regularly (rinse mouth)
<input type="checkbox"/> _____		

Reliever Medications (use in all zones):

☐ Albuterol MDI/Neb 2 puffs/1 dose Every 4-6 hrs as needed

Albuterol MDI – 2 puffs 15-20 minutes before exercise if needed

YELLOW ZONE: CAUTION

- Symptoms are better and/or Peak flow is over _____ (70% of personal best) after the test dose of albuterol.
- Symptoms may be mild or moderate.
- You may be coughing or wheezing, have shortness of breath or chest tightness.
- Activities and sleep may be distributed.

Start Albuterol MDI/Neb 2puffs/1 dose Every 4-6 hrs. as needed

Medicine	Dose	When to give it
<input type="checkbox"/> Flovent _____ mcg	2 puffs	_____ times per day regularly (rinse mouth)
<input type="checkbox"/> Singulair _____ mg	1 tablet	1 time per day regularly
<input type="checkbox"/> Advair Diskus ____/50	1 puff	_____ times per day regularly (rinse mouth)
<input type="checkbox"/> _____		

Let your doctor know if you keep going into the yellow zone. The green zone medicines may need to be changed to keep other episodes from starting.

RED ZONE: DANGER

- Peak flow is under _____ after the test dose of albuterol.
- You may be coughing, very short of breath, and/or the skin between ribs neck may be tight.
- You may not be wheezing because air cannot move out of your airways.
- Your asthma symptoms are serious.
- This may be an EMERGENCY.

First, do not stop controller medication and also give:

- ☐ Albuterol MDI: 2 puffs every 20 minutes up to 3 times
- ☐ Albuterol nebulizers: 1 dose every 20 minutes up to 3 times

Second, call your doctor at: (_____) _____ - _____

Call 911 and request an ambulance to go to a hospital if symptoms are severe, like:

- Your lips or fingernails are blue.
- You are struggling to breathe.

The following section is to be completed by the PARENT:

[illegible]

_____ (_____) _____ (_____) _____
 Date Parent/Guardian Signature Home Phone Emergency

 *

The following is to be completed by the PHYSICIAN:
Diagnosis for which medication is given: ASTHMA

NAME OF MEDICINE:	ALBUTEROL (Ventolin/Proventil)
FORM:	Inhaler
DOSE:	2 puffs
IF MEDICINE TO BE GIVEN DAILY, AT WHAT TIME?	N/A
IF MEDICINE TO BE GIVEN "WHEN NEEDED," DESCRIBE INDICATIONS:	wheezing; coughing; chest tightness; shortness of breath
HOW SOON CAN IT BE REPEATED?	15 minutes
IS CHILD AUTHORIZED TO SELF- MEDICATE HER/HIMSELF?	
LIST SIGNIFICANT SIDE EFFECTS:	dizziness; jitteriness; increased heart rate
LENGTH OF TIME THIS TREATMENT IS RECOMMENDED:	entire school year

Other Information: may also be used prior to exercise

Determining your personal best with a peak flow meter.	Day of week:								
How much does my asthma bother me today. Write a number for each day of the week 0=not at all 1=a little 2=kind of 3=a lot									
How to measure your peak flow: Slide the button down as far as it will go so that it measures zero. Stand up. Do not put your fingers near the button. Take a deep breath and blow into the peak flow meter once as fast and hard as you can. Look at the number next to the button. Repeat two more times and write the highest number you got in the space below for each day. Use the peak flow meter two times a day, in the morning and in the afternoon. Record these two numbers for each day of the week. Bring this form to your next visit.									
Peak Flow Measure morning									
Peak Flow Measure afternoon									
Medications you took every day:	Check each day if you took your controller medication								
Medications you took for quick relief:	Write down how many times you used quick relief medicine each day								

Asthma Program Supplies

- Education materials
- Dust mite covers, pillow, mattress
- Air purifiers
- Peak flow meters
- Spacers

Asthma Program Supplies Spacers



Asthma Program

Intervention and Follow-up

- Training in clinic
- Home visits
- Phone follow-up
- Communication with primary care provider

Asthma Program

Extra Benefits

- Patient assistance programs
- Home aerosol program
- Advocacy with landlords regarding allergen abatement (carpet, air conditioning, water leaks)

Asthma Program Results

- Enroll 100 patients per year
- Referrals from all 6 El Rio pediatric clinic sites
- 50% of referred patients enrolled
- Cost \$100K per year

Asthma Program Results 2003-2004

- 100% Severity Assessment
- 100% Self-Management Goals
- 100% Written Asthma Action Plan
- Follow-up Complete on 64%

Asthma Program Results 2003-2004

Patients with Hospitalization at entry

JB 3 days, all ICU, 3 Follow-up calls

CF 2 days, 1 ICU, 1 Follow-up call

ER 1 day, 0 ICU, Withdrew

AR 10 days, 2 ICU, 3 Follow-up calls

No recurrence of Hospitalization at F/U

Asthma Program Results 2003-2004

- At enrollment 30 children with emergency department visits for asthma attack in previous 12 months
- At follow-up 5 children with emergency department visits for asthma attack

Asthma Program Results 2003-2004

- At enrollment 77 children had missed 2 or more days of school in previous 12 months due to asthma
- At follow-up 31 children missed 2 or more days of school

Asthma Program Results 2003-2004

- At enrollment 60 children had required corticosteroid "burst" for an asthma attack in previous 12 months
- At follow-up 16 had required a corticosteroid "burst" for an asthma attack

Asthma Program Results 2003-2004

- Indices of good asthma care at F/U out of 118 F/U periods
- 88 reported daily controller medication use
- 106 reported written asthma action plans
- 108 reported inhaler spacer at home

Asthma Program

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- MMWR, Feb. 27, 2004, Vol. 53, No. 7
- CDC Surveillance Summaries, Mar. 29, MMWR 2002; 51 (No. SS-1)
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- MMWR, Jan. 14, 2005, Vol. 54, No. 1
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